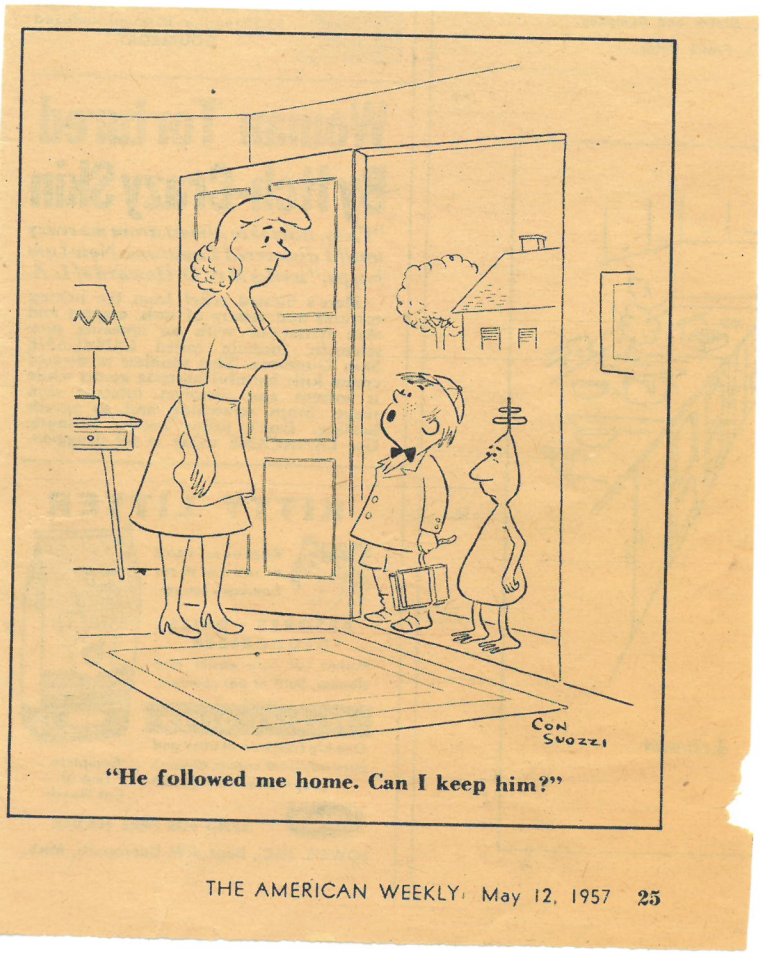


"He followed me home. Can I keep him?"

Martians over France

One morning last October, Jean Narcy, a road mender of Haute-Marne, France, was riding to work on his bicycle. In a wheat field he saw a little whiskered man just under 4 ft. tall, who wore a fur coat, an orange corset and a plush cap.

"Bonjour," said M. Narcy.

The little man muttered something like "I'll be seeing you." Then he jumped into a small (10 ft. in diameter) flying saucer, took off with a buzzing sound and disappeared into the clouds.

With Narcy's "hairy Martian" as a starting point, the French press ran wild, and a deluge of Martians has been raining down ever since. They have come in flying cigars, crowns, comets, winged mushrooms, even a flying chamber pot. Unlike Americans who have seen flying saucers, the French "sighters" paid little attention to the vehicles. They were more interested in the people from space.

The Martians were anything but standardized. One who stopped M. Roger Barrault near the town of Lavoux had brilliant eyes, an enormous mustache, wore rubbers and spoke Latin. Another asked M. Pierre Lucas, a Breton baker, for a light. He was bearded and had a single eye in the middle of his forehead. M. Lucas could not remember what language he spoke.

Paralyzing Pygmies. As the Martian invasion of France proceeded, the invaders became more bizarre. A troup of pygmies in plastic helmets gamboled down a railroad track near Quarouble and transfixed M. Marius Dewilde with "a paralyzing beam of light." Some Martians were blue, others were yellow or pink. A traveling salesman of the Côtes-du-Nord saw a wonderful sight: a deep rose flying cigar from which stepped a zebra-striped Martian. As he alighted, he changed color, chameleon-like, from yellow to green.

The Martians marched en masse into French affairs. Cartoonists welcomed them delightedly (*see cuts*). As they multiplied, they even gained respectability. *Le Figaro* reported: "Counsellor General of Alpes Maritimes greets flying saucers' first appearance on the Côte d'Azur." *France Soir* announced that "a daily flying-saucer service seems to have been established between Marais Poitevin and La Rochelle." A man from space even made the social columns of *Paris Presse*: "Mustached Martian spends weekend at Vienna." Angry deputies asked questions in Parliament. Air Force authorities (even as in the U.S.) were badgered for explanations.

Before the many-colored Martians rained down on France, famed Swiss Psychiatrist C. G. Jung was asked what he thought about the saucer epidemic.

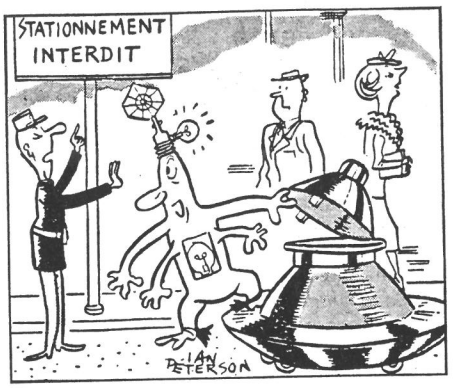
"Something is being seen," said Jung. "What is seen may be, in the case of a single observer, a subjective vision (hallucination). In the case of several or many observers, it may be a collective vision. Such a psychic phenomenon . . . could be a spontaneous reaction of the subconscious to the present conscious situation: the fear of an apparently insoluble political situation in the world . . . At such times eyes turn heavenwards . . . and miraculous forebodings of a threatening or consoling nature appear from on high."

No More Dreams. Dr. Jung blames the U.S. Air Force for mishandling the saucer epidemic and for permitting irresponsible journalists to pump it for bits of sensational-sounding information.* He does not believe that the saucers are space ships. Those that are not hallucinations, he thinks, are probably misinterpretations of physical objects or effects. But he was willing to speculate about the effect on the human race of an invasion by beings from another world.

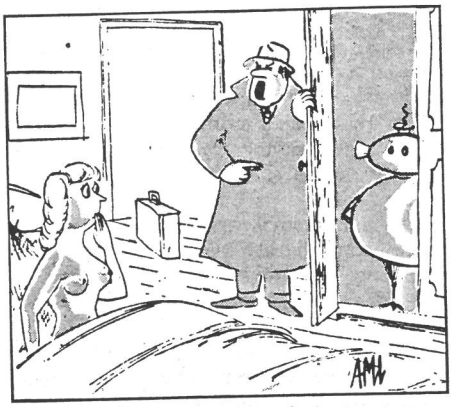
"Should the origin of the phenomenon turn out to be an extraterrestrial one," said Dr. Jung, "it would prove an intelligent interplanetary link. The impact of such a fact on humanity is unforeseeable. But, without doubt, we would be placed in the very questionable position of today's primitive societies that clash with the superior cultures of the white race. All initiative would be wrested from us. As an old witch doctor once said to me, with tears in his eyes: We would 'have no more dreams.'

"Our sciences and technology would go to the junk pile. What such a catastrophe would mean morally we can gauge by the pitiful decline of the primitive cultures that takes place before our eyes. The capacity to manufacture [interplanetary space ships] points to a technology towering sky high over ours.

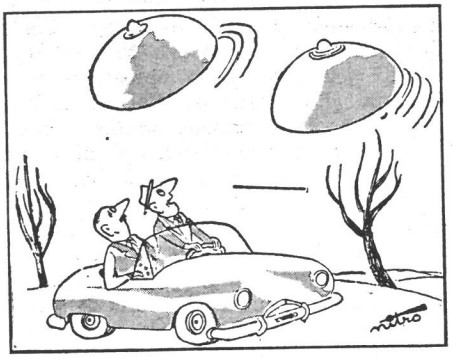
"Just as the Pax Britannica made an end to tribal warfare in Africa, so our world could roll up its Iron Curtain and use it for scrap . . . This might not be so bad. But we would have been 'discovered' and colonized."



"What's the matter? Can't you read?"



"And I suppose that's a Martian?"



"Those must come from Venus!"

France-Dimanche

"Come on—we'll show you our moon."

Tubeless Radio

The first fully transistorized radio was claimed this week by Regency, a division of Industrial Development Engineering Associates. It is not quite the wristwatch radio of the comics, but it is only a small pocketful (3 by 5 by 1¼ in.), and it makes loud music on a single hearing-aid battery. Inside, instead of vacuum tubes, it has four transistors.

The chief advantage of transistors—besides their smallness—is that they have no glowing filament and therefore need no "A current" to keep the filament hot. All they need is the "B current," and very little of that. According to Edward C. Tudor, president of I.D.E.A., the 22½-volt B battery (cost: $1.15) lasts 20 to 30 hours if used continuously, longer when played intermittently.

* The most complete deflation of the flying-saucer delusion was written by Captain Edward J. Ruppelt, who was in charge of the Air Force's careful saucer investigation from 1951 to 1953. It was printed in the May issue of *True* Magazine, which had much to do with augmenting the saucer hubbub. Captain Ruppelt's conclusion: visiting space ships are theoretically possible, but there has been no evidence to support this possibility.

—Doug Anderson.

SR / Research

SCIENCE & HUMANITY

DEPARTMENTS: Research in America • Letters to the Science Editor

RESEARCH IN AMERICA

WHAT ARE THE UNIDENTIFIED AERIAL OBJECTS?

THE opening chapter of *The Book of the Prophet Ezekiel* reports a strange event in "the land of the Chaldeans by the river Chebar . . . in the fifth day of the month, which was the fifth year of king Jehoiachin's captivity." The St. James translation of Ezekiel's words runs as follows:

> And I looked, and, behold, a whirlwind came out of the north, a great cloud, and a fire infolding itself, and a brightness was about it, and out of the midst thereof as the colour of amber, out of the midst of the fire.
>
> Also out of the midst thereof came the likeness of four living creatures. And this was their appearance; they had the likeness of a man.
>
> And every one had four faces, and every one had four wings.
>
> And their feet were straight feet; and the sole of their feet was like the sole of a calf's foot: and they sparkled like the colour of burnished brass.
>
> And they had the hands of a man under their wings on their four sides; and they four had their faces and their wings.
>
> Their wings were joined one to another; they turned not when they went; they went every one straight forward.
>
> As for the likeness of their faces, they four had the face of a man, and the face of a lion, on the right side: and they four had the face of an ox on the left side; they four also had the face of an eagle.
>
> Thus were their faces: and their wings were stretched upward; two wings of every one were joined one to another, and two covered their bodies.
>
> And they went every one straight forward: whither the spirit was to go, they went; and they turned not when they went.
>
> As for the likeness of the living creatures, their appearance was like burning coals of fire, and like the appearance of lamps: it went up and down among the living creatures; and the fire was bright, and out of the fire went forth lightning.
>
> And the living creatures ran and returned as the appearance of a flash of lightning.
>
> Now as I beheld the living creatures, behold one wheel upon the earth by the living creatures, with his four faces.
>
> The appearance of the wheels and their work was like unto the colour of a beryl: and they four had one likeness: and their appearance and their work was as it were a wheel in the middle of a wheel.
>
> When they went, they went upon their four sides: and they turned not when they went.
>
> As for their rings, they were so high that they were dreadful; and their rings were full of eyes round about them four.
>
> And when the living creatures went, the wheels went by them: and when the living creatures were lifted up from the earth, the wheels were lifted up.
>
> Whithersoever the spirit was to go, they went, thither was their spirit to go; and the wheels were lifted up over against them: for the spirit of the living creature was in the wheels.

ACCORDING to Ezekiel's account of the happening, he was so thoroughly awed and frightened that he "fell upon my face." While prone, he "heard a voice of one that spake" and a short while later "I heard also the noise of the wings of the living creatures that touched one another, and the noise of the wheels over against them, and the noise of a great rushing." Finally, he was lifted up and taken away to a place by the Chebar where he "sat . . . astonished . . . seven days."

Ezekiel claimed that he had been in the hands of God, and that since Ezekiel was an inconspicuous priest at the time, the landing of the winged wheels carrying a voice was simply God's way of dramatizing Ezekiel's appointment as "a watchman unto the house of Israel." Successive translators of the *Bible* have accepted Ezekiel's adventure as a visionary one. But another and quite different interpretation of Ezekiel's experience, made long afterwards, was given prominence in a book published last year by Henry Regnery Company under the title: *Anatomy of a Phenomenon.* The author, French-born mathematician Jacques Vallee, while taking no firm position of his own on the matter, quoted from without disapproving modern "books dealing with unidentified flying objects" which find some of Ezekiel's expressions "similar to those commonly used by witnesses of modern sightings of UFOs." One passage cited by Vallee reads:

"Ezekiel's narrative in the *Bible* is mainly concerned with describing this incident in his own phraseology, however vague it may seem to us today. Ezekiel lived in an era of few metals and no machines. The war chariot and the plough were the last words in their 'technology.' For this reason it was extremely difficult for Ezekiel to portray . . . the event . . . with his vocabulary."

Vallee's own text proceeds:

"According to the same sources, an attempt to reconstruct from Ezekiel's words a model of the phenomenon in modern terms would lead to a conception of a machine rather than a natural phenomenon such as a mirage:

" 'The vehicle which Ezekiel observed had four distinct pillars. From each pillar protruded two wings, eight in all,

which moved about. At the base of each column there were rings with circular openings. The four columns formed a cubic body over which there was a transparent dome. For lack of any better term Ezekiel defined it as a "firmament." A throne of sapphire stone crowned the dome, encircled by a rainbow. The reference to sapphire, amber, crystal, and beryl may be allusions to plastics which certain parts of the ship were made of.

"'The prophet describes the workings of this extraordinary craft. Except for the wings no other parts moved. The wings produced a sound 'like the noise of great waters.' A fiery and thunderous exhaust issued from the base of the engine.

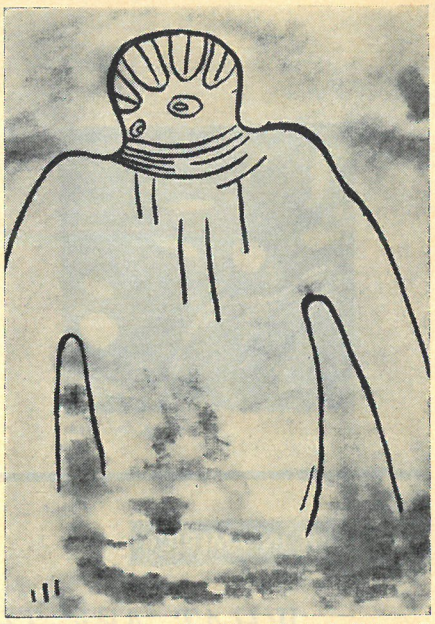
"'The incident is so objectively depicted that it could hardly be considered a tale to impress superstitious listeners.'"

IT is only in recent times that astronomers have come to believe that beings with intelligence equal or superior to that of earthly men must inhabit hundreds if not thousands of planets of stars other than our sun (see *SR*, Jan. 2, 1960). If Ezekiel had been the unwitting agent of a distant civilization that discovered planet earth and considered earthmen degenerate, it would be logical to assume that his principals had been observing earth for a long time. A still more recent book than mathematician Vallee's—this one, written jointly by Russian astronomer I. S. Shklovskii and Harvard astronomer Carl Sagan, is titled *Intelligent Life in the Universe* and published by Holden-Day—explores the implications such observations may have for our earthly past and future. The text of *Intelligent Life in the Universe* points out:

> Some 25,000,000 years ago, there existed a creature named Proconsul who was probably ancestral both to *Homo sapiens* and to the great apes. Proconsul was erect, bipedal, and tool-using. The subsequent evolution in the line of man has been marked, as all evolutionary tracks are, by fits and starts and dead ends. We see, for example, the late Parenthropus, late Java man, and late Neanderthal man all represent evolutionary dead ends. They were intelligent, communicative, and probably had their own simple cultures, but they left no issue. Had the physical environment been slightly different, had the accidents of daily existence occurred another way, *Homo sapiens* might have been an evolutionary dead end, and perhaps today there would have been a technical civilization of Pithecanthropi on the planet earth; or perhaps no civilization at all.
>
> But these matters, while difficult for us to reconstruct from a distance of millions of years, would have been much clearer to a technical civilization greatly in advance of the present one on earth, which visited us every hundred thousand years or so to see if anything of interest was happening lately. Some 25,000,000 years ago, a Galactic survey ship on a routine visit to the third planet of a relatively common G dwarf [star, the sun] may have noted an interesting and promising evolutionary development: Proconsul. The information would have filtered at the speed of light slowly through the [Milky Way] Galaxy, and a notation would have been made in some central information repository, perhaps at the Galactic center. If the emergence of intelligent life on a planet is of general scientific or other interest to the Galactic civilizations, it is reasonable that with the emergence of Proconsul, the rate of sampling of our planet should have increased, perhaps to about once every 10,000 years. At the beginning of the most recent post-glacial epoch, the development of social structure, art, religion, and elementary technical skills should have increased the contact frequency still further. But if the interval between sampling is only several thousand years, there is then a possibility that contact with an extraterrestrial civilization has occurred within historical times.

Shklovskii and Sagan agree that "there are no reliable reports of direct contact with an extraterrestrial civilization during the last few centuries, when critical scholarship and nonsuperstitious reasoning have been fairly widespread." They classify as "highly debatable" the postulations of Soviet ethnologist M. M. Agrest that representatives from an extraterrestrial civilization visited earth in the more distant past. "Although certain claims have been made from time to time, no known ancient artifacts have been unambiguously connected with a cosmic visit," the two astronomers declare. "Much commotion was made over the discovery of the image of a 'Martian god' complete with space suit, found in cliffs overlooking the Sahara. It transpired that these Tassili frescoes represented, in fact, an ordinary human being in a ritual mask and costume. The press tends to exaggerate and over-publicize such matters. Such publicity is due, of course, to widespread popular interest in the possibility of contact with intelligent extraterrestrials. But for this very reason, we must examine critically any purported artifacts uncovered."

ONE historical episode Professor Sagan does feel is worthy of further analysis in relation to the possibility of contact between earthmen and ambassadors from the planets of other stars. That is the story of the Sumerian people. Sumer, he reminds, "was an early—perhaps the first—civilization in the contemporary sense on the planet earth. It was founded in the fourth millennium B.C. or earlier. We do not know where the Sumerians came from. Their language was strange; it had no cognates with any known Indo-European language, and is understood only because a later people, the Akkadians, compiled extensive Sumerian-Akkadian dictionaries." Sagan goes on:



—From "Intelligent Life in the Universe."

One of the 6000 B.C. frescoes at Tassili-n-ajjer in Africa.

> The successors to the Sumerians and Akkadians were the Babylonians, Assyrians, and Persians. Thus the Sumerian civilization is in many respects the ancestor of our own. I feel that if Sumerian civilization is depicted by the descendants of the Sumerians themselves to be of nonhuman origin, the relevant legends should be examined carefully. I do not claim that the following is necessarily an example of extraterrestrial contact, but it is the type of legend that deserves more careful study.
>
> Taken at face value, the legend suggests that contact occurred between human beings and a nonhuman civilization of immense powers on the shores of the Persian Gulf, perhaps near the site of the ancient Sumerian city of Eridu, and in the fourth millennium B.C. or earlier. There are three different but cross-referenced accounts of the *Apkallu* dating from classical times. Each can be traced back to Berosus, a priest of Bel-Marduk, in the city of Babylon, at the time of Alexander the Great. Berosus, in turn, had access to cuneiform and pictographic records dating back several thousand years before his time.

Sagan next quotes, from the 1876 revised edition of Cory's *Ancient Fragments*, Greek and Latin translations of the three separate accounts he mentions: those of Alexander Polyhistor, Abydenus, and Appolodorus. There is space here only for the Polyhistor version:

side the town of Exeter, New Hampshire. This assumption is wrong. The Exeter episode occurred in September 1965, one month after the Public Information Office of the Air Force wrote a letter that led to the convening of the Scientific Advisory Board *ad hoc* committee. I have seen that letter. It was not written in pursuit of any unidentified aerial object. A known research balloon had gone astray high in the atmosphere and had been floating on the winds over the midwestern states for days, bringing insistent calls from curious newsmen. PIO asked Air Force Operations to help in telling a more complete story on such matters to the press, and Operations bucked the letter back; only if the scientists could produce more information would there be more information to pass on to the papers.

Incident at Exeter raised several serious questions. One was the possibility that the recent electric power blackout in the northeastern United States, and similar blackouts elsewhere in the country, were due to electromagnetic effects of UFOs. I cannot find an electrical or electronics engineer who accepts this idea. *Incident at Exeter* also alleged that the Air Force surrounds UFO information with secrecy. Perhaps columnist Fuller had some unfortunate experiences in this regard, but I was granted access to all UFO reports except one. The exception was the Robertson panel report of 17 January 1953. The text of it, I was told, was classified because the panel had been called at the request of the Central Intelligence Agency. At my own request, the Air Force asked CIA to declassify the Robertson report text; as these words are written, no reply has been received. In absence of the text, however, the Air Force has given me a summary of the report, which reads as follows:

> 1. The undersigned Panel of Scientific Consultants has met at the request of the Government to evaluate any possible threat to national security posed by Unidentified Flying Objects ("Flying Saucers"), and to make recommendation. The Panel has received the evidence as presented by cognizant Governmental agencies, primarily the United States Air Force, and has reviewed a selection of the best documented incidents.
>
> 2. As a result of its considerations, the Panel *concludes*:
>
> That the evidence presented on Unidentified Flying Objects shows

A REPORT OF A HYPNOTIC EPISODE WITH A UFO IN

SEVERAL people called from Exeter to report that an unusual case had broken in the Boston and New Hampshire papers involving a highly respected couple who had encountered a UFO at close quarters back in 1961, and who had been so traumatically shattered by the experience that they had had to undergo hypnoanalysis by one of the highest ranking medical psychiatrists in Boston in order to repair the damage they had suffered. I had heard of this case from the Exeter police but had not followed it up because I was confining my research strictly to recent cases.

Although I was resolved to keep to plan, I felt it necessary to explore a development resulting from this case, which was that the couple had decided to speak at a meeting at the Pearce Memorial Unitarian-Universalist Church in Dover, New Hampshire, on November 7, 1965, breaking a long silence they had observed because they did not want publicity or ridicule that might accrue from the exposure of their story. Since the New England press had broken the story, they wanted to correct any misconceptions arising from the newspaper accounts, and had agreed to speak on invitation from the church.

I was to learn later of an interesting angle of that invitation. Lt. Alan Brandt, a public information officer at the Pease Air Force Base, was a member of the church, and had helped arrange the meeting. Perhaps this was significant. I learned by phone that it was just possible that the Air Force was unofficially permitting a story to leak out. But this was pure speculation. . . .

Under separate hypnosis, I learned, [the couple who were to speak—Mr. and Mrs. Barney Hill], both penetrated a period of amnesia which had lasted for two hours following the UFO landing next to their car. Under hypnosis, they related that they had been taken aboard the strange craft, assured that they would not be harmed, given a physical examination by a group of humanoid creatures, and released with the assurance that they would have no conscious memory whatever of the experience.

The sessions were taped by the psychiatrist, then funneled slowly back to the conscious minds of the couple as the therapy progressed. The technique was successful in eliminating the dreams and nightmares both husband and wife had suffered following the experience. But neither Mr. nor Mrs. Hill made any claim as to the validity of what they had related to the psychiatrist under hypnosis. They had told close friends only that this was what had come out on the tapes, accounting for two hours which had mysteriously disappeared from an evening in their lives.

The story had broken in the papers, four years after the event, through a meeting of the Hills with technical people interested in the UFO portion of the story. The Hills had spoken at this session at the request of Walter Webb, a member of the staff of the Hayden Planetarium in Boston. It was the first time the couple had mentioned the episode to any but their closest friends. They were acutely sensitive to adverse publicity because Barney Hill, a leader in the New Hampshire National Association for the Advancement of Colored People, was a Negro; his wife Betty, a social worker for the state of New Hampshire, was white. Partners in a mixed marriage, they knew that involvement with a sensational story like this could have damaging results because of the prejudices within the population.

Both Hills were extremely intelligent, and highly regarded. Barney Hill had received citations and awards for his community work from both the Governor of New Hampshire and Sargent Shriver. Betty Hill was a dedicated social worker, whom the Exeter police said was unflagging in her work to help the poor. The psychiatrist involved was an outstanding medical man, known throughout the world for his accomplishments in the neuropsychiatric field.

It was a complex, bizarre story. However, because it was four years old, I resolved to confine myself to the church meeting. . . .

I was surprised to see that Lieutenant Brandt, the public information officer at Pease AFB, was on the speaker's platform in his Air Force uniform. It indicated that there was at least tacit Air Force approval of his being a speaker at the meeting, but whether or not it suggested that the Air Force was ready to leak out UFO news at a meeting like this, or test public reaction, no one could tell.

Lieutenant Brandt's introductory speech was certainly vague and unilluminating. He merely reviewed the Air Force policy on UFOs as expressed in its own handbook, without any further elaboration. He did indicate that the Air Force took UFO sightings seriously

Berosus, in his first book concerning the history of Babylonia, informs us that he lived in the time of Alexander, the son of Philip. And he mentions that there were written accounts preserved at Babylon with the greatest care, comprehending a term of fifteen myriads of years. These writings contained a history of the heavens and the sea; of the birth of mankind; also of those who had sovereign rule; and of the actions achieved by them.

And, in the first place, he describes Babylonia as a country which lay between the Tigris and Euphrates. He mentions that . . . the part of Babylon which bordered upon Arabia was barren, and without water; but that which lay on the other side had hills, and was fruitful. At Babylon there was (in these times) a great resort of people of various nations, who inhabited Chaldea, and lived without rule and order, like the beasts of the field.

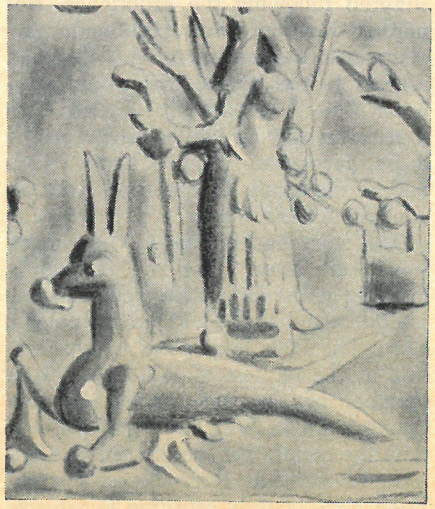
In the first year there made its appearance, from a part of the Persian Gulf which bordered upon Babylonia, an animal endowed with reason, who was called Oannes. (According to the account of Apollodorus) the whole body of the animal was like that of a fish; and had under a fish's head another head, and also feet below, similar to those of a man, subjoined to the fish's tail. His voice, too, and language was articulate and human; and a representation of him is preserved even to this day.

This Being, in the daytime used to converse with men; but took no food at that season; and he gave them an insight into letters, and sciences, and every kind of art. He taught them to construct houses, to found temples, to compile laws, and explained to them the principles of geometrical knowledge. He made them distinguish the seeds of the earth, and showed them how to collect fruits. In short, he instructed them in everything which could tend to soften manners and humanize mankind. . . .

SAGAN emphasizes that Polyhistor, Abydenus, and Appolodorus all chronicle the same "remarkable sequence of events. Sumerian civilization is depicted by the descendants of the Sumerians themselves to be of nonhuman origin. A succession of strange creatures appears over the course of several generations. Their only apparent purpose is to instruct mankind. Each knows of the mission and accomplishments of his predecessors. . . . The straightforward nature of this account of contact with superior beings is notable. Oannes and the other *Apkallu* are described variously as 'animals endowed with reason,' as 'beings,' as 'semi-daemons,' and as 'personages'—never as gods."

At one time archeological and anthropological evidence indicated strongly that the Sumerian civilization crystallized out of chaos virtually overnight. So precipitate a change would tend to support the speculation that Sumerian knowledge came full blown from a superior source of wisdom. More modern research suggests that Sumerian civilization developed over a long period, lessening the probability of a sudden visitation from a "teaching" culture far-off. Clay cylinders bearing likenesses that seem to corroborate the myth of extraterrestrial contact (see sketch on this page) may therefore be, Sagan concedes, "nothing more than the experiments of the ancient unconscious mind to understand and portray a sometimes incomprehensible, sometimes hostile environment. The stories of the *Apkallu* may have been made out of whole cloth, perhaps as late as Babylonian times, perhaps by Berosus himself. But stories like the Oannes legend, and representations especially of the earliest civilizations on the earth, deserve much more critical studies than have been performed heretofore, with the possibility of direct contact with an extraterrestrial civilization as one of many possible alternative interpretations."

Despite the apparent absence of identifiable evidence, Sagan insists it is statistically possible "that the earth has been visited by various Galactic civilizations many times (possibly about 10,000 during geological time). It is not out of the question even that some kind of base is maintained within the solar system to provide continuity for successive expeditions. Because of weathering and the possibility of detection and interference by the inhabitants of the earth, it might have appeared preferable not to erect such a base on the earth's surface. The moon seems one reasonable alternative site for a base. The cosmic visitors would probably reason that by the time man had developed the technology to explore the far side of the moon, he would also have attained a certain limited degree of advancement and might be called civilized. Forthcoming high-resolution photographic reconnaissance of the moon —particularly, of the back side—from space vehicles might bear these possibilities in mind."



—From "Intelligent Life in the Universe."

Detail from a Sumer cylinder: fish-headed and -footed man.

I HAVE followed Professor Sagan's historical approach to the contemporary controversy over unidentified aerial objects (more often and more dubiously called "unidentified *flying* objects," or UFOs) because of his unique position in the argument. He is the only nonmember of the U.S. Air Force Scientific Advisory Board who sat on the 1966 *ad hoc* committee that board assigned to review Air Force handling of UFO sightings. The *ad hoc* committee after an all-day meeting last February unanimously concurred in three major conclusions: 1) "In the nineteen years since the first UFO was sighted there has been no evidence that unidentified flying objects are a threat to our national security;" 2) "In nineteen years and more than 10,000 sightings recorded and classified, there appears to be no verified and fully satisfactory evidence of any case that is clearly outside the framework of presently known science and technology;" 3) "Although the resources assigned to it have been quite limited (only one officer, a sergeant, and a secretary) . . . the present Air Force program dealing with UFO sightings has been well-organized." Taken together, these conclusions plainly do not support the accusation that the Air Force, or a faction within it, has conspired to withhold from the American people information about the arrival on earth of emissaries from civilized peoples on other planets. Contrariwise, the committee findings do not preclude the possibility of extraterrestrial visitations and do include recommendations that the Air Force "provide opportunity for scientific investigation of selected sightings in more detail and depth than has been possible to date" in order not to close off any chance "that analysis of new sightings may provide some additions to scientific knowledge."

On page 50 of this issue of *SR*, Professor Sagan vividly expresses his doubts about the reality of "flying saucers." And at still another place (see page 44), *SR* TRADE WINDS columnist John G. Fuller reports at second hand a modern echo of the Ezekiel experience. These are the two extremes of the current UFO debate.

Since *Incident at Exeter*, Fuller's book on the subject, has been advertised as "the book that will cause the Air Force to admit that UFOs are real," many people assume that the assembling of the Air Force Scientific Advisory Board committee referred to above was provoked by the claims of sixty people that they had seen one or more UFOs out-

no indication that these phenomena constitute a direct physical threat to national security.

We firmly believe that there is no residuum of cases which indicates phenomena which are attributable to foreign artifacts capable of hostile acts, and that there is no evidence that the phenomena indicate a need for the revision of current scientific concepts.

3. In the light of this conclusion, the Panel recommends:

That the national security agencies take immediate steps to strip the Unidentified Flying Objects of the special status they have been given and the aura of mystery they have unfortunately acquired.

We suggest that this aim may be achieved by an integrated program designed to reassure the public of the total lack of evidence of inimical forces behind the phenomena.

Signed to this document are the names of the panelists: Luis W. Alvarez, University of California; Lloyd V. Berkner, Associated Universities, Inc.; S. A. Goudsmit, Brookhaven National Laboratories; Thornton Page, Johns Hopkins University; and H. P. Robertson, California Institute of Technology, chairman.

"Aura of mystery" was the key phrase in the Robertson panel précis. I found similar wording in all the earlier Air Force reports I saw, including the very first one, written in 1949, two years after Kenneth Arnold, a businessman who piloted his own airplane, started the modern UFO excitement by telling the newspapers he had watched "a chainlike formation of disc-shaped objects" cavorting in the sky around Mount Rainier in the Rockies. The "aura of mystery" existed and persisted because the task of tracking UFOs originally had been assigned to the intelligence unit of the Air Force Materiel Command at the Wright-Patterson Air Base near Dayton, Ohio. Intelligence men are not supposed to talk about their work; so information about UFOs was put into secret dossiers —five of them in all: Project Sign, Project Grudge No. 1, Project Grudge No. 2, Project Grudge No. 3, and Project Grudge No. 4. From the beginning those engaged in the assignment expressed respect for the intellectual caliber and professional competence of many UFO sighters and were unwilling to dismiss the UFO accounts that came from such people. Far from being rejected, outside interest was actively sought. Dr. J. Allan Hynek, then an Ohio State University astronomer, was immediately attached

NEW ENGLAND

and that anyone sighting them should report them to the Pease Air Force Base immediately.

The Hills spoke very circumspectly of their experience. They pointed out emphatically that although their hypnotic therapy had revealed to them on tape recordings that they were taken aboard the strange craft and given a physical examination by intelligent humanoid beings, they could not testify that this was the truth. They *could* testify to their conscious sighting of the UFO as it came down near their car, but beyond that neither the Hills nor the psychiatrist could fully explain the mystery of the two hours of amnesia which followed....

The couple had left Canada, driving south toward Portsmouth, and stopped at a restaurant in Colebrook, New Hampshire, on the Canadian border. "When Betty and I left Colebrook," Mr. Hill said, "we never remembered the exact time until we were regressed back under hypnosis. Here, I had looked at a clock on the wall, and the time was five minutes after ten at night. We drove down Route 3, and when we arrived at Groveton, Betty called my attention to a light that was moving in the sky. And I looked at it, and actually to me it was nothing unusual except that we were fortunate enough to see a satellite. It had no doubt gone off its course, and you could see that it was going along the curvature of the earth. It was quite a distance out, meaning that it looked like a star.

"So, this is exciting in itself, and we had 7 x 50 binoculars with us, which we always take with us on vacation. And I stopped the car, so that we could both get a look at the object. Suddenly, Betty said, 'Barney, if you call that a star or a satellite, you are being ridiculous. Just look at it.' So with the naked eye, without taking the binoculars, I could see that it was not a distant thing far out there, but now more like a plane. I said, 'Betty, we obviously made a mistake. That's a commercial plane on its way to Canada.' It was traveling from the south, going north. And I was facing west, meaning I was facing toward Vermont. So I took the binoculars and started looking, and then I was completely amazed. Because instead of continuing on the northerly pattern, it turned toward the west, toward the direction of Vermont, completing the turn and then coming in toward us. Then I noticed a winking sort of light pattern, not at all like a conventional aircraft. And although I was amazed, I told Betty that it was probably a Piper Cub or some other light plane, and that it wasn't anything to be concerned about.

"We got into the car, and started driving south on Route 3. Betty continued to look out and she said, 'Well, Barney, if it is whatever you're calling it, I don't know why. Because it's still out there, and still following us.' I would slow down occasionally, and would look out and see that it was still there. And I felt a little uncomfortable about the whole thing. I thought that probably some hunters or fishermen had a light plane, and could see us on the highway, and were following us.

"When we reached Cannon Mountain . . . , this object went around the western side of the mountain.... The object . . . was now facing us on the highway, still some distance away. I was completely baffled by this, and I was hoping a car would pass us one way or another, because there was some comfort thinking I could stop someone and ask if they saw the same thing."

MR. HILL then described the actual encounter.

The object settled down, about 200 feet in the air. He began walking toward it, peering through the binoculars. It looked to both him and his wife like a huge pancake. Around the base was a band of light, and through the binoculars he saw a row of structural windows. What's more, he could actually discern figures inside the craft, and he ran back to the car, jumped in, and started to drive off.

Then the craft rose up, circled the car, and went out of sight over the roof.

Both the Hills heard a strange, electronic beeping sound and began to feel a strange tingling sensation. It was at this point that their memory was blocked completely for a two-hour period of total amnesia.

The Hills refused to discuss the details of their experience as recalled on the tapes under hypnosis. They did not regain consciousness until they had driven some thirty miles to the south. The professional help they sought was instrumental in relieving them of the traumatic neuroses resulting from the experience, but they both insisted that they were making no claims beyond the conscious recollection of the incident.

"We just don't know the answer," Mr. Hill concluded. "We sought the best professional psychiatric help possible, and this is the answer we got."

—JOHN G. FULLER
in *Incident At Exeter*,
©1966 by John G. Fuller,
(G. P. Putnam's Sons, $5.95).

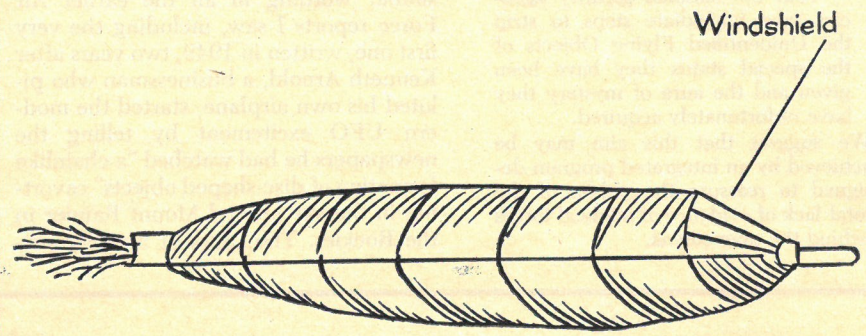
to the enterprise as a continuing consultant, and scientists more eminent than he were asked for occasional advice. The late Nobel laureate Irving Langmuir, for example, was brought in from General Electric, Dr. G. E. Valley from Massachusetts Institute of Technology, Dr. James Lipp from the RAND Corporation. Unnamed agents were summoned from the Federal Bureau of Investigation, ball lightning experts from the U.S. Weather Bureau, nuclear power specialists from the Atomic Energy Commission. One theory thoroughly investigated rose from a suspicion that German rocket technicians captured by the Russians were catapulting "clay pigeons" of enormous size; another theory was that the planet Mars was populated, and the people there had been attracted by the five nuclear explosions set off up to then on planet earth.

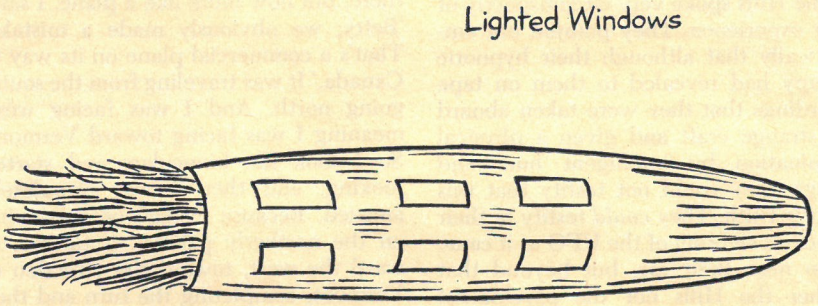
It was recognized almost from the start that the secret nature of the search process only antagonized qualified informants and made them suspicious of what was happening to information they supplied; at the same time, the secrecy added to the psychological burden of curiosity seekers, the credulous, and the hysterical. UFOs undoubtedly were real, but what did reality mean—physical objects, optical illusions, atmospheric anomalies, mirages, hallucinations? To sort the significant from the irrelevant, Air Force brass decided, in March 1952, to tot the score and hire an electronic computer under private contract to draw up a model of a UFO. At that time, 1,300 UFO sightings were on record in the Air Force intelligence files; of these, 434 had been classified as unknowns; but it turned out that only a dozen of the 434 were defined clearly enough for the computer to consider. Sketches representing nine of those twelve are reproduced on this and the opposite page.

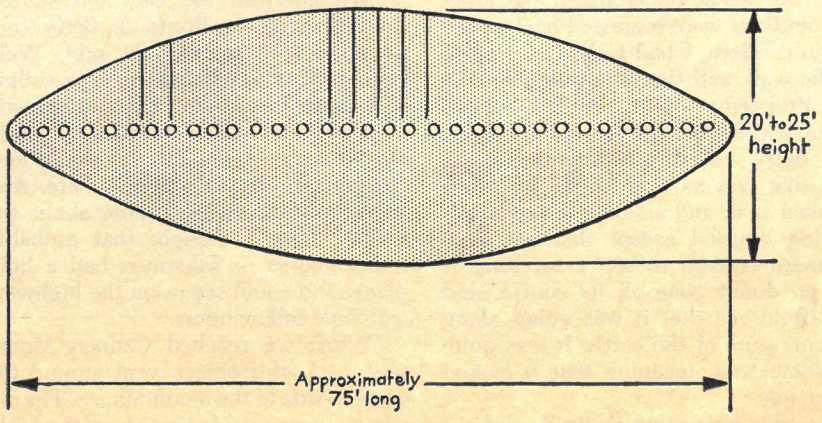
Computer programmers charged with responsibility for synthesizing the master model for a UFO grew more discouraged as their work progressed. They had to try to encompass four distinct shapes that appeared in the twelve sketches: a propeller shape, a winged aircraft shape, a cigar shape, and an elliptical or disc shape. Besides, one shape was smooth, with no protrusions or other details; another shape had rocket or jet pods on each side that were shooting out flames; another shape had a fin or rudder attached to it; another shape had portholes or windows. In presenting the outcome in Project Blue Book Special Report Number 14 (the two words, Blue Book, told the initiated that the UFO search was no longer a secret project, for secret project code names contain only one word) in 1955, the Air Force pointed out that "the data as a whole . . . [when] scientifically evaluated and arranged . . . did not show any marked

NINE VERSIONS OF

Sketches from U. S. Air

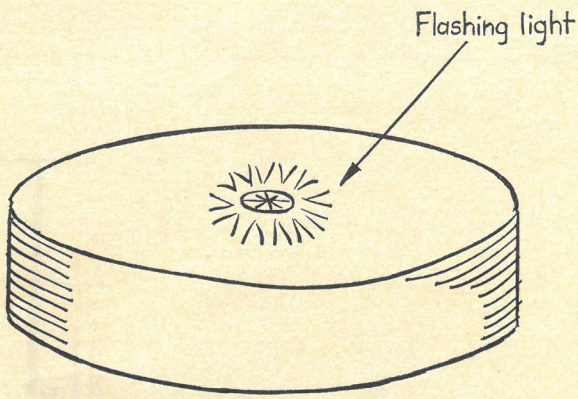


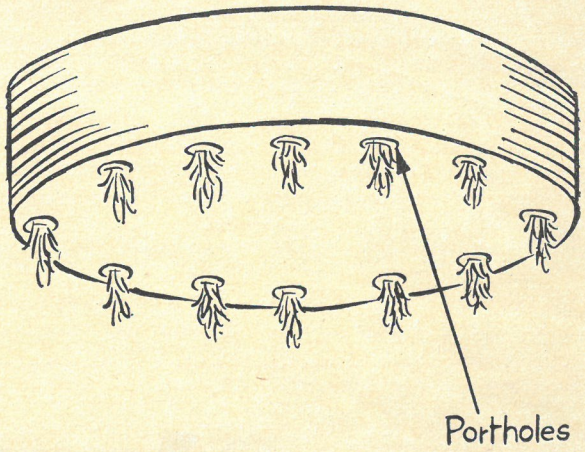


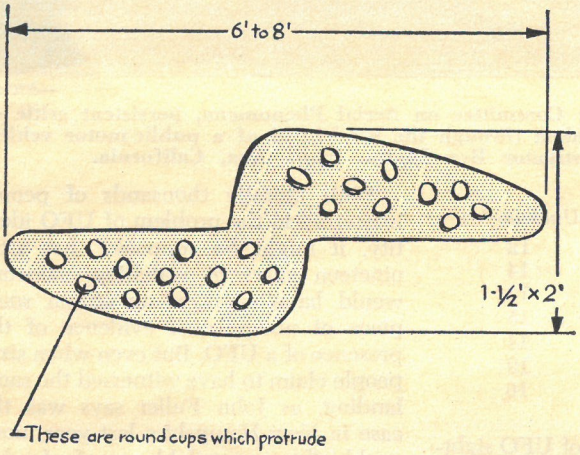


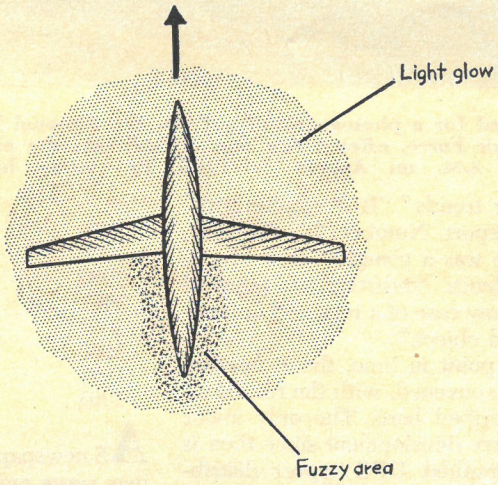
UNIDENTIFIED AERIAL OBJECTS

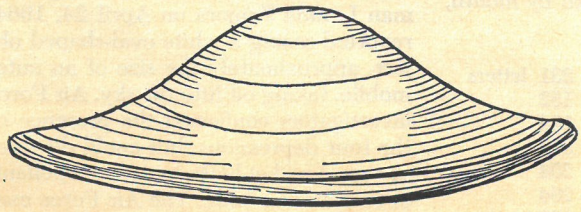
Force Blue Book Special Report No. 14

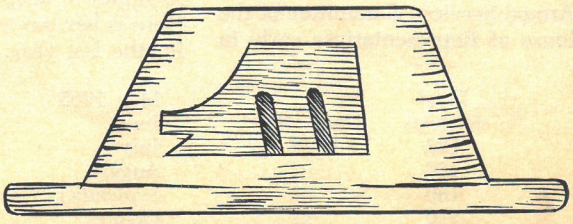




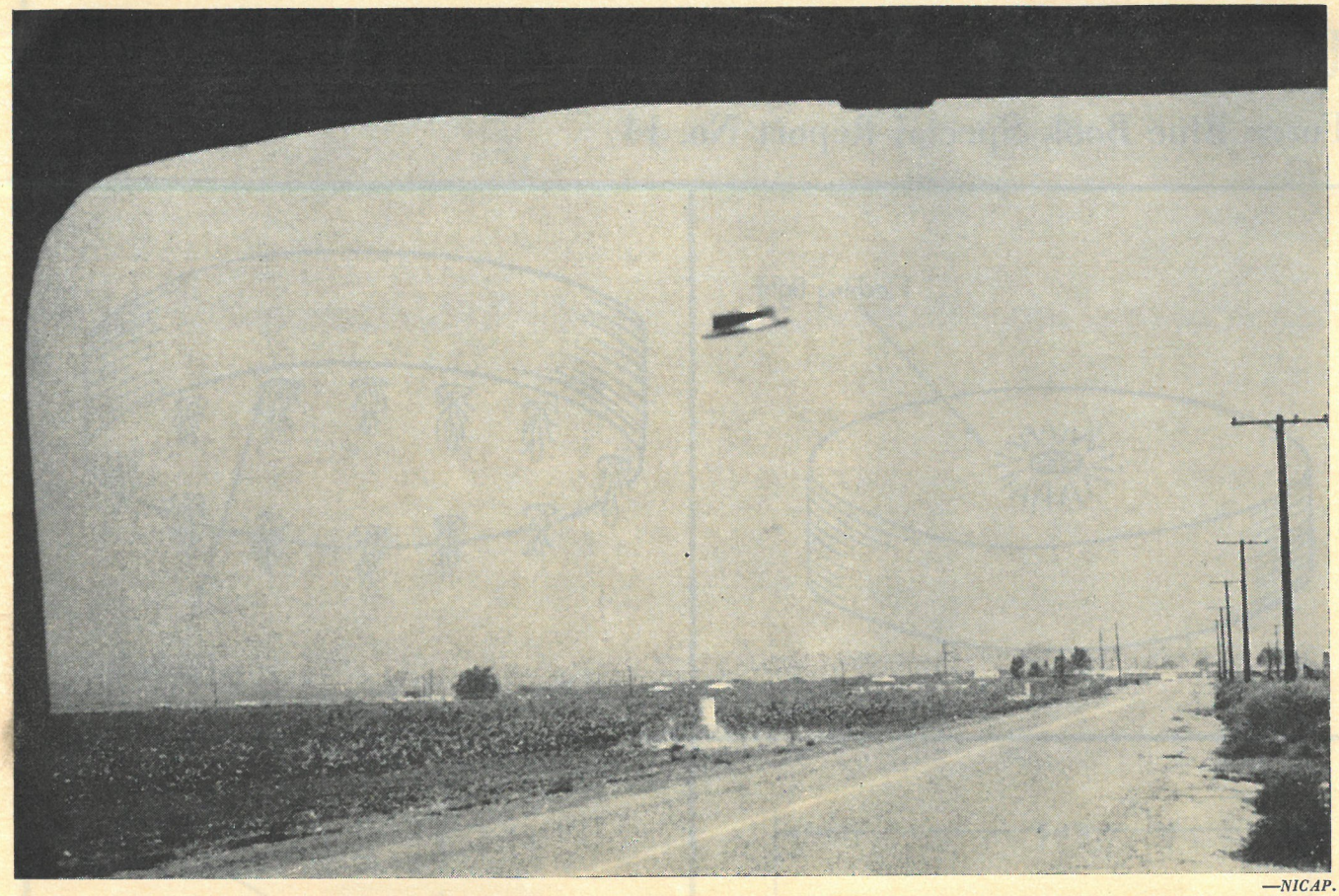








—Doug Anderson, following Air Force-Library of Congress records.



—NICAP.

When asked for a photograph of a UFO, the National Investigating Committee on Aerial Phenomena, persistent critic of the U.S. Air Force, offered this one. NICAP says the picture was taken through the windshield of a public motor vehicle at 11:30 A.M. on August 3, 1965, by county highway investigator Rex Heflin, Santa Ana, California.

patterns or trends." "It is emphasized," Special Report Number 14 declared, "that there was a complete lack of any valid evidence consisting of physical matter in any case of a reported unidentified aerial object."

At that point in time, the Robertson panel was convened, with the results already described here. The only major documentary development since then is a mimeographed UFO report distributed by the Library of Congress Legislative Reference Bureau under the title, "Facts about Unidentified Flying Objects." UFOs have continued to be reported, in the same wavelike pattern that has prevailed since 1947; the official figures were in this table, submitted to the Armed Services Committee of the U.S. House of Representatives early in 1966:

Year	*Total sightings*	*Unidentified*
1947	122	12
1948	156	7
1949	186	22
1950	210	27
1951	169	22
1952	1,501	303
1953	509	42
1954	489	46
1955	545	24
1956	670	14
1957	1,006	14
1958	627	10
1959	390	12
1960	557	14
1961	591	13
1962	474	15
1963	399	14
1964	562	19
1965	886	16

As newspaper accounts of UFO sightings surge and die, letters addressed to the Air Force at the Pentagon rise and fall in number. UFOs are now a favorite topic for public school essays, and young Mrs. Sara Hunt, of the community relations branch of the Air Force Public Information Office in Washington, D.C., struggles to keep up with their queries. Here is her box score, month by month, for the last year:

May 1965	231 letters
June	152
July	194
August	387
September	254
October	294
November	336
December	323
January 1966	408
February	474
March	779
April	1,597
May	1,173
June	904

With literally thousands of people interested in the problem of UFO identity, it might be supposed that after nineteen years of watching, someone would have managed to obtain some piece of unequivocal evidence of the presence of a UFO. But even when sixty people claim to have witnessed the same landing, as John Fuller says was the case in New Hampshire last year, none could offer unassailable proof of what he saw. The clearest photograph of a supposed UFO (see above) shows what looks like a straw hat floating through the air.

The closest approach to a UFO "imprint" is a set of four rectangular depressions that were found in a gravelly gully near Socorro, New Mexico, after policeman Lonnie Zamora on April 24, 1964, reported seeing a white oval-shaped object, approximately the size of an automobile, taking off into the sky. Air Force investigators confirmed the presence of the four depressions, but could discover no sign of rocket blast, burned propellant, or radiation residue. The Air Force men were preceded to the site by agents of the National Investigating Committee on Aerial Phenomena (NICAP), a non-profit organization claiming a membership of 5,000 dedicated to uncovering the truth about UFOs. Richard Hall, assistant director of NICAP, has been quoted by

John Fuller as saying "It looked as if the landing gear [of the UFO] had scraped down" a rock "and left some metal on it." A sample of the metal was analyzed by a private Washington, D.C. chemical laboratory, and, Hall said, "they [the lab] identified this substance as silica." The most common form of silica is sand.

FROM a strict scientific perspective, the chances of an extraterrestrial vehicle penetrating earth's atmosphere, hovering or landing, and taking off again without detection are astronomically small. To begin with, the sky is now continually scanned by radars that can tell when an object passes through earth's ionosphere and whether the object is natural—such as a meteor—or artificial. A half dozen other radar fences must be crossed by any skyborne object passing over the North American continent in a north-south direction, and east-west passages must pass over yet another fence. These instruments have been refined to an incredibly sharp-seeing state; they can register the movement in the air of a single bee; they can detect the sea-breeze as it moves onto the land; birds riding thermal currents in the air appear in these radar-scopes as undulations (see photo, right, below), capable of reflecting light in curious designs.

The supersonic speeds at which UFOs are said to travel would generate sonic booms if they were attained by earthly aircraft. Why do the UFOs produce no booms?

The dizzying turns that UFOs are said to execute defy the force of earthly gravity. Terrestrial aircraft could not survive comparable maneuvers. Is there some way to cancel the pull of gravity? Earthmen have been hunting one for a long time, with no success.

Because of these fundamental theoretical barriers to undetected invasion of the earth by space vehicles, conservative physical scientists shy from involvement in the UFO hunt. That is why the Science and Astronautics Committee of the Congress has never been willing to hold public hearings on the question. It is why the National Aeronautics and Space Administration has held aloof. It is why the National Academy of Sciences has declined suggestions to appoint an investigative panel.

It could be argued that there is little or no scientific justification for continued dignification of UFOs. But the question has extended itself well beyond the range of pure science. The credibility of the Air Force is deeply involved, and the only way to clear the air is to employ whatever science may be employed legitimately. The recommendations of the Scientific Advisory Board *ad hoc* committee, headed by Dr. Brian O'Brien, a consulting physicist from Connecticut, have already initiated this process. Beginning last April, when Air Force Secretary Harold Brown relayed the committee proposals to the House Armed Services Committee, UFO reports received at the 152 air bases of the country began filtering through research and development headquarters of the Air Force on their way to Major Hector Quintanilla, who heads the Blue Book Project at Wright-Patterson and is responsible for checking out all UFO stories. The research and development men immediately spotted a weakness that had nothing to do with science: The bases did their preliminary checking through individuals assigned by the base commanders, with no regard for the particular needs of UFO identification. Consequently, minimum criteria are now being worked up to govern choice of the local checkers, and an effort is being made to standardize the data called for in the checking. The whole operation has been lifted out of intelligence and put into research and development. Regulations governing the operation are being re-written accordingly.

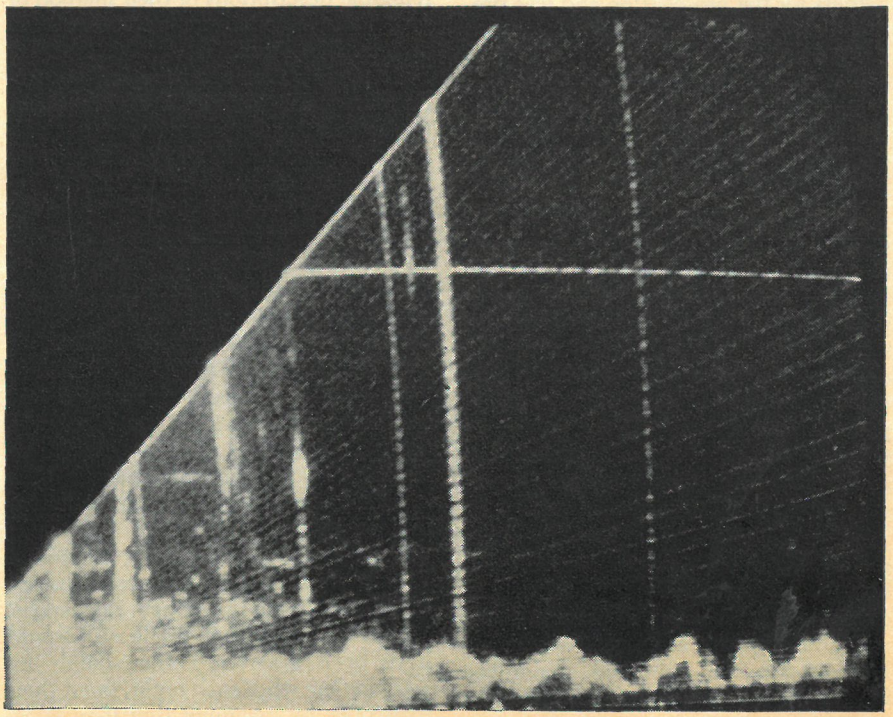
Although the Blue Book operation is being continued as before, under Major Quintanilla's direction, a parallel system for screening UFOs is being organized on an independent footing, through half a dozen universities. To remove suspicion of Air Force censorship, one "lead" university is being sought to choose five cooperating schools across the country. Up to now, no university that has been approached has been willing to accept the "lead" job. But the Air Force remains hopeful of getting the system rolling by September, with a working budget of $300,000 for an eighteen-month UFO study. At the end of that period, the Air Force expects to have enough clear data to decide whether a routine search for UFOs is worthwhile.

Those who suspect that some UFOs are fast-moving vehicles but do not originate outside earth's atmosphere are eager to see how the Air Force will handle one aspect of UFO investigation. Will the public be told the truth in those cases where sighted phenomena actually are advanced experimental craft operated by the Air Force itself? I discovered one instance in which the U.S. Navy destroyer *Gyatt*, deployed in the Caribbean, picked up an aerial object late in 1964. The radar clocked the object at an apparent speed of 3,800 knots. The object later was identified as a new aerial fighter, traveling at 1,700 miles per hour.

One scientific bonus that may emerge from the Air Force shift in tactics *vis-à-vis* UFOs is better understanding of atmospheric anomalies involved in clear air turbulence.

One scientific concern should be to avoid the ballooning of costs of a long-range UFO hunt at the taxpayers expense, as happened with the Mohole Project. The Mohole was started by a handful of independent enthusiasts, responsible to no one. Those who are loudest in demanding extensive surveillance of the sky in fear of UFOs now belong in the same category.

—JOHN LEAR,
Science Editor.



—U.S. Air Force—NASA.

One military flier lost his life high in earth's atmosphere while chasing the planet Venus in the belief that Venus was a UFO. Does light reflected from birds (seen as undulations in radar picture above) create similar illusions?

THE SAUCERIAN CULT

An Astronomer's Interpretation

By CARL SAGAN

THE possibility of life beyond the earth evokes today strong and partisan emotions. There are some who want very much to believe that extraterrestrial life—particularly the intelligent variety—is common throughout the universe; and there are those who are committed to the view that extraterrestrial life is impossible, or so rare as to have neither practical nor philosophical interest. It seems to me appropriate that more than passing attention be paid to such psychological predispositions.

One spring some years ago, the department of astronomy received a telephone call from the local District Attorney's office. There was in progress the criminal trial of a gentleman whom I shall call Helmut Winckler, a Nebraskan who claimed to have had personal contacts with inhabitants of the planet Saturn. The state desired an expert witness. With wry comments and professional asides, the message was conveyed to me. I agreed to serve as a surprise witness for the prosecution and was presented with a sheaf of publications written by or about the defendant, concerning his extraordinary adventures.

The following is my recollection of the statements made in these publications and subsequently verified by the defendant under oath:

Winckler was a salesman of agricultural implements in Nebraska; he was of German ancestry, but born in the United States. He had few intellectual pretensions, but had at least a grammar school education. Winckler was a trifle chubby, of florid complexion and robust countenance, and wore steel-rimmed glasses. He looked considerably younger than his sixty-odd years, was soft-spoken and polite on the witness stand. His accent was that of the rural Midwest.

Winckler testified that one day while motoring along a back road in Nebraska, he had the remarkable good fortune to overtake a parked flying saucer. Naturally he stopped, as anyone would. To his surprise, he observed, emerging from the saucer, several men and women of entirely human appearance, dressed in flowing robes and speaking mellifluously. The language which they were speaking so mellifluously was Hochdeutsch. Coincidentally, Winckler understood Hochdeutsch. The saucerians were delighted. Winckler was delighted.

The saucerians explained that they were from the planet Saturn, and had, for reasons of their own, selected Winckler as an "intermediary." They were to impart to him information of great value for the inhabitants of the planet earth. It seems that the international political situation on earth had reached serious proportions, a fact which concerned the Saturnians, an old, wise, and sympathetic race. They were here to save us from ourselves. Winckler never revealed why *he* had been selected. It appears that it was not because he knew Hochdeutsch. The Saturnians speak all human tongues.

Winckler accompanied the Saturnians into their saucer. His publications contain diagrams of the interior of the saucers, replete with esoteric and unintelligible descriptions of their method of propulsion. The interiors resemble those of the 1958 Buick.

The group then departed for the Arctic Circle, taking Winckler with them. On a subsequent saucer foray which Winckler made with the Saturnians, he was taken beneath Bering Strait to inspect the Soviet Union's suboceanic missile emplacements. You may not have heard of these, but according to Winckler the government of the United States knows all about them.

In another of Winckler's flights, this time over the North Pole, the Saturnians were heard to remark that only a few months ago the axis of the earth was tilting a dangerous six degrees. Winckler paled, but the Saturnians assured him that they had repaired the misalignment in short order.

When the court recessed, I queried Winckler about this delinquent behavior of the earth's axis of rotation. I explained that even a very much smaller tilt would have been discovered immediately by astronomers who, each night, point their telescopes by assuming that they know precisely where the celestial poles are. Winckler's response was that he could hardly be held responsible for statements made by inhabitants of the planet Saturn. He was merely relaying information. But he left the distinct impression that the Saturnians knew quite a bit more about the subject than do bystanders in courtrooms.

On another expedition, the Saturnians took Winckler to that Mecca of the occult, the Great Pyramid of Gizeh in Egypt. They mingled with a group of tourists being guided *through* the interior of the pyramid. (I have a vivid mental image of this procession: Egyptian guide, two middle-aged ladies from Dubuque, some assorted French and German tourists, six Saturnians in flowing robes, and, bringing up the rear, Helmut Winckler in levis.) At a certain intersection of pathways, the tourists went in one direction, and Winckler and the Saturnians in the other. They were confronted with a blank wall. Appropriate pressures were applied to appropriate bricks, and the wall slid open, revealing a chamber within. The party entered, and the stone door slid silently shut behind them. In the room were 1) a small, one-man flying saucer, quite dusty with age; 2) a large and equally ancient wooden cross perhaps ten feet high; and 3) a toroid of thorns about eight inches in diameter. The Saturnians offhandedly explained that one of their number had attempted a mission to earth some two thousand years ago. He had met with qualified success.

IN extracting these marvels from Winckler, the Assistant District Attorney first displayed shock, then disbelief, and finally, righteous indignation. He shook his head and peered upwards—awaiting the thunderbolt which doubtless would terminate the proceedings. The courtroom was hushed. The jury was awed. Winckler was cool. From the tone of his voice, he might have been describing a reaper sale in Lincoln.

One of the principal pastimes of the Saturnians, while cavorting about the earth, was their remote geological survey. They possessed instruments capable of determining, from quite remarkable altitudes, the location and distribution of mineral-bearing ores. They discovered untapped veins of gold, pristine platinum-bearing rocks, and uranium ores unknown to man. The locations of these finds were carefully kept from Winckler. One day, however, the Saturnians pointed out to Winckler the existence of a quartz mine—while flying over southern California. You may think that quartz is rather uninteresting, compared with gold, platinum, and uranium. But this was a rather special kind of quartz. It cured cancer.

Soon after landing, Winckler was selling quartz stock. I have the distinct impression that he sold half-interests in the mine—several dozen half-interests. Add-

The adjacent text is excerpted from the Holden-Day book, *Intelligent Life in the Universe.*

ing to his subsequent embarrassment was the fact that the mine was already owned by another gentleman and was actively producing quartz. It also transpired that by a perfectly remarkable coincidence, Winckler had visited this very mine several years earlier.

But none of these activities directly precipitated Winckler's indictment. His difficulties are traceable to his promotion of the healing properties of quartz among elderly and wealthy widows. Many ladies had lent him sizable sums to advance his venture. In the last months before his arrest, it was his practice to speak before large gatherings of flying saucer enthusiasts—some but by no means all of whom were also elderly, wealthy widows. They paid his transportation and living expenses, invited him to their homes, and accorded him the customary respect due prophets of new religions. The complaint leading to Winckler's arrest arose from a combination of money borrowed and not repaid, affection promised and not delivered. . . .

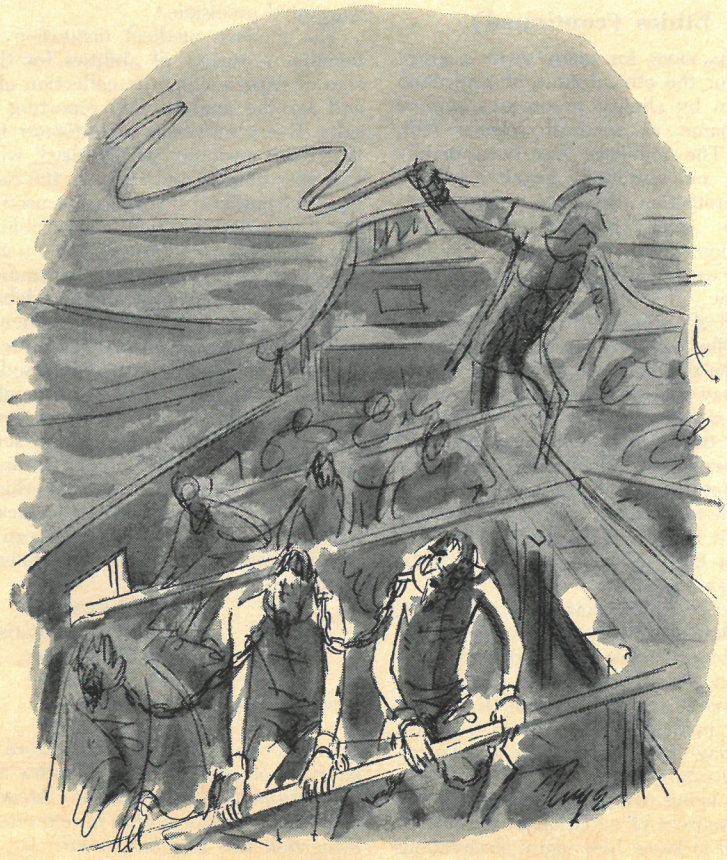
Winckler was subsequently found guilty of fraud and sentenced to prison, despite the admirable efforts of his attorney. In my discussions with Winckler during recesses, I was unable to decide to what extent his escapades with the Saturnians were a conscious fraud, and to what extent he genuinely believed his account. But it was clear that many others found Winckler's adventures in ringing consonance with what they believed —or would like to believe.

Winckler's experience underlines the existence of an unfulfilled need in contemporary society. Almost any other of the many accounts of alleged contacts of human beings with the crews of flying saucers—accounts which regale the flying saucer societies – follow the same pattern and stress the same points. The extraterrestrials are human, with few even minor physical differences from local cosmetic standards. (I know of no case of Negro saucerians, or Oriental saucerians, reported in the United States; but there are very few flying saucer contact reports made in this country by Negroes or by Orientals.) The saucerians are wise and gentle and loving, concerned for our safety during this epoch of continuing international tensions, yet for some reason unwilling to intervene in force. They have long ago solved international disputes on their home planets. They have great gifts in the humanities—this is, of course, still an appropriate subject for them—but also immense technical abilities. In short, the saucerians are all-powerful, all-knowing, and concerned with the plight of mankind as a parent would be for his children. Yet they do not direct the course of the major events of the day, presumably on the grounds that mankind must work out its own destiny. I cannot help but conclude that the flying saucer societies represent a thinly disguised religion, and that the saucerians are the deities of the cult.

As science has progressed during the last few centuries, areas which were originally the exclusive province of religion have been increasingly preempted by science. We no longer hold that the earth is stationary, or that it is at the center of the universe; nor that the world was made even approximately on December 14, 4004 B.C.; nor that it was made in seven days; nor that different species had separate creations; nor that the origin of the solar system and the origin of life are forever beyond the ken of man. Rather, the laboratory synthesis of life from materials which were abundant in the early environment of the earth seems no more than a decade off. One result of these encroachments by science has been that there seems less and less for God to do. If he creates some hydrogen at the beginning of the universe, and establishes the physical laws, he can then retire. He is a *roi fainéant*. If God did not directly make life or man, it is hard to believe that he will intervene in our everyday lives, or answer our supplications.

YET the temptation to believe in an omnipotent, omniscient, and loving God is especially great today. The pace of world events is out of the hands of the ordinary individual. We have no assurance that tomorrow will not find the world a radioactive pyre. Our destiny appears to be at the mercy of forces we little understand and only perilously control. If only there existed a god who was concerned with our plight, who would give some assurance of our survival; but who was explicable within the framework of contemporary science. . . . The saucer myths represent a neat compromise between the need to believe in a traditional paternal God and the contemporary pressures to accept the pronouncements of science.

While the saucerian cult is viable and widespread—at least, in the United States—it represents only a small fraction of the total number of saucer enthusiasts. There are large numbers of people who have, in good conscience, observed unknown objects in the skies which they have called "unidentified flying objects"—UFOs—and which they believe to be of intelligent extraterrestrial origin. The diversity of these reports is as striking as the observations themselves. UFOs have been described variously as rapidly moving or hovering; disk-shaped, cigar-shaped, or ball-shaped; moving silently or noisily; with fiery exhaust, with no exhaust whatever; accompanied by flashing lights, or uniformly glowing with a silvery cast. It is



"This should pretty well answer your question as to 'what would a great big empire like Rome want with little old Phoenicia?'"

immediately clear that all UFOs do not share a common origin. Indeed, the use of a generic term such as "UFOs" or "flying saucers" has served to confuse the issue by implying a common origin.

As detailed by the American astronomer Donald H. Menzel of Harvard College Observatory, confirmed identifications of UFOs have been made with the following: unconventional aircraft; aircraft under uncommon weather conditions; aircraft with unusual external light patterns; meteorological and other high-altitude balloons; artificial earth satellites; flocks of birds; reflections of searchlights or headlights off clouds; reflection of sunlight from shiny surfaces; luminescent organisms, including one case of a firefly lodged between two adjacent panes of glass in an airplane cockpit window; optical mirages and looming; lenticular cloud formations; ball lightning; sundogs; meteors, including the green fireballs; planets, especially Venus; bright stars; and the aurora borealis. Radar detection of unidentified flying objects has also occurred occasionally. Many of these sightings have been explained in terms of radar reflection off temperature inversion layers in the atmosphere, and other sources of radar "angels."

CONSIDERING the difficulty in tracing out the visual and radar sightings—the visual sightings are often made by individuals with little experience in observing the skies—it is remarkable that all but a few per cent of the reported UFOs have been identified as naturally occurring, if sometimes unusual phenomena. It is remarkable that the professional astronomers, who are familiar with the skies and regularly scan them with sophisticated instrumentation, have never, to the best of my knowledge, photographed anything like the classical UFO. For example, in the Harvard Meteor Project, performed in New Mexico during the period 1954-1958, extensive photographic observations were made by Super-Schmidt cameras with a sixty degree field of view. In all a surface area of 7,000 square kilometers was observed to eighty kilometers altitude for a total period of some 3,000 hours. Visual and photographic observations were good down to a magnitude of plus four, close to the faintest object visible with the naked eye. These observations by professional astronomers were made in a locale and period characterized by extensive reports of unidentified flying objects. No unexplained objects were detected, despite the fact that rapidly moving objects were being sought in a study of meteors. Similar negative results have been obtained by large numbers of astronomers, and helps to explain the general skepticism of the astronomical community towards flying saucer reports. There is no way to exclude the very occasional presence of unidentified objects in our skies, but the run-of-the-mill flying saucer observations (made in the United States on the average of about once a day) are certainly common astronomical objects and atmospheric phenomena—and perhaps some not so common—which have been misinterpreted by the observer.

Repeated sightings of UFOs, and the persistence of the United States Air Force and members of the responsible scientific community in explaining the sightings away have suggested to some that a conspiracy exists to conceal from the public the true nature of the UFOs. But precisely because people desire so intensely that unidentified flying objects be of benign, intelligent, and extraterrestrial origin, honesty requires that in evaluating the observations, we accept only the most rigorous logic and the most convincing evidence.

THERE is also the opposite danger. Public interest in flying saucers, contact reports, and extraterrestrial life in general has proved a frequent source of embarrassment to many scientists, whose statements tend to be distorted, exaggerated, and otherwise perturbed by the bright light of popular concern. There is then a tendency to reject out of hand the possibility of extraterrestrial intelligence as baseless, improbable, or unscientific. There are also covert Ptolemaicists who find the prospects of extraterrestrial intelligence threatening. Finding life beyond the earth—particularly intelligent life—wrenches at our secret hope that man is the pinnacle of creation, a contention which no other species on our planet can now challenge. Even simple forms of extraterrestrial life may have abilities and adaptations denied to us. The discovery of life on some other world will, among many things, be for us a humbling experience.

The question of extraterrestrial life—and even more so, the question of extraterrestrial intelligence—is then many things to many men. In assessing evidence for extraterrestrial life, and in evaluating statistical estimates of the likelihood of extraterrestrial intelligence, we may be at the mercy of our prejudices. At the present time, there is no unambiguous evidence for even simple varieties of extraterrestrial life, although the situation may change in the coming years.

LETTERS TO THE SCIENCE EDITOR

Medical Ethics (continued)

THERE HAS BEEN for many years a grave concern for the ethical issue of protection from harm by clinical procedures applied in the name of medical science *[SR,* July 2]. The influence has been mainly restrictive and essentially negative in providing protection for the unknowing: protection from unwilling or forced participation.

Let us explore the obverse side of the ethics issue.

The gift of person for medical experimentation is filled with dignity and hope. In the eyes of the donor, the opportunity to participate may provide for a great gift to mankind and is given to the researcher in positive trust that it will be used wisely and for the benefit of other men. The donor expects not only that the experiment be worthwhile in topic but that it be a *scientific* experiment if such is implied. The donor trusts that the scientific utilization will be effective and efficient.

Now, to be called "scientific" in this era, the experiment must be of scientific quality in more than the classic sense of a manifest concern for the objectivity and precision of the method of experimentation. For many realms of medical inquiry, there is in this modern day the ability to *design* experiments: to establish beforehand the importance of being wrong, to anticipate the inherent sources of variation in the experiment, and to know how many observations may be required. Without these elements of experimental method, the gift so hopefully given may be spent on shaky results. (On the other hand, vastly too many observations may be made, so that the loss of value might come in delivering an unwarranted precision.)

The modern medical institution brings together a variety of abilities for the design of experiments, the collection of data, and for the analysis and reporting of results. Every university investigator implies that these resources will be used, when he identifies himself and requests the cooperation of a patient; if he has not used them, and if he is not personally responsible for an efficient design of experiment and a modern analytic technique, then his assurance (or implication) of scientific merit is debatable.

In the name of the institution, then, there are real and implied guarantees to the donor that his contribution would be used to its full value and not squandered through fault or obsolescence in the design of research. The full guarantee of modern scientific treatment of proffered human information is indeed an element of medical ethic (and perhaps an element of a broader academic ethic). Further, the guarantee can come not from one man, or one department, but only from an institution.

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EDITOR'S NOTE: *There will be more letters on medical ethics in next month's Science and Humanity Supplement. Meanwhile, SR's science editor wishes to reiterate something that was said last month: Dr. Henry Beecher's report on experimental abuses was reproduced from "The New England Journal of Medicine."*

BOOK BONUS

by FRANK EDWARDS

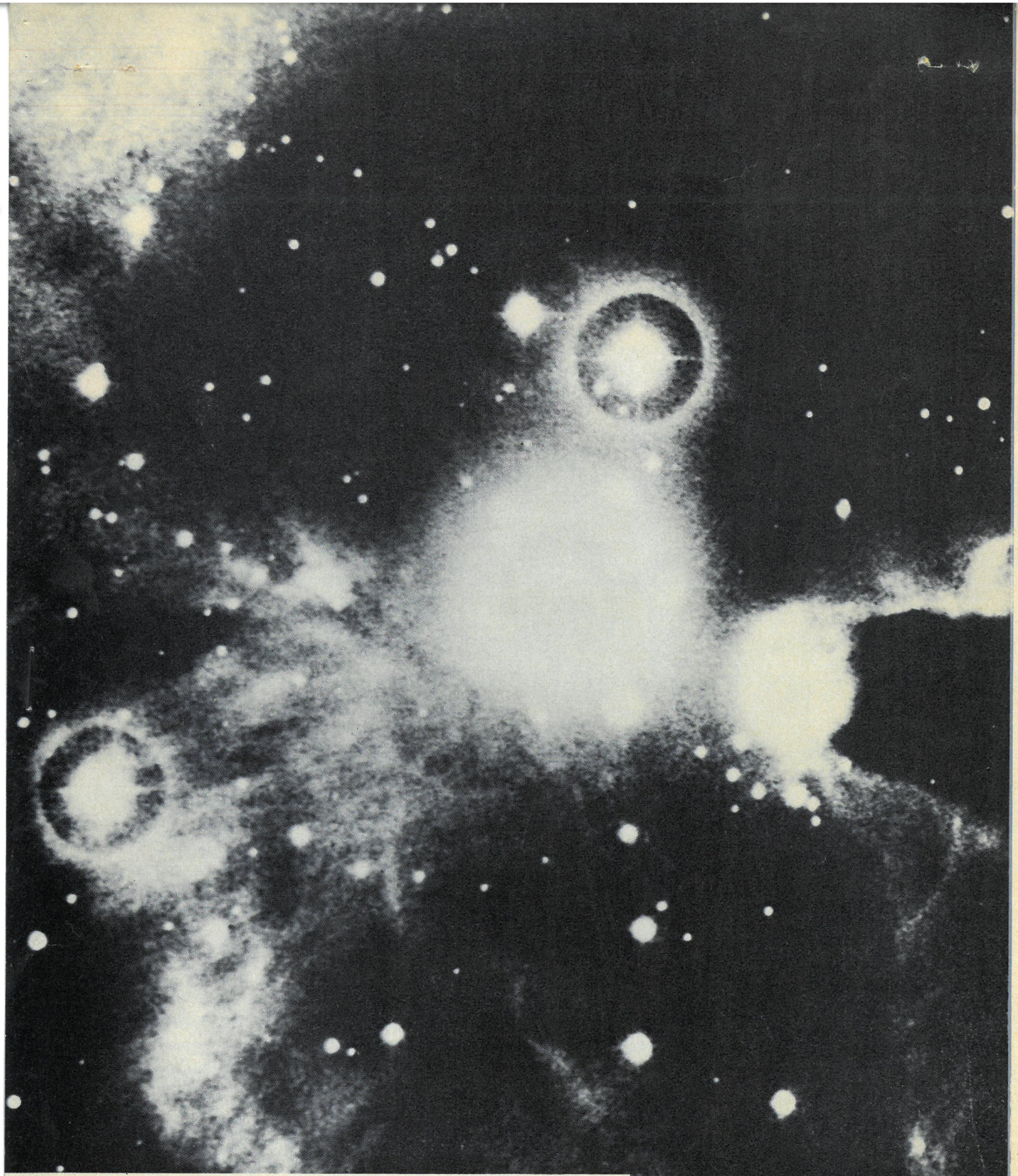
FLYING SAUCERS— SERIOUS BUSINESS

Straight from the New York Times' best-seller list, the most challenging and well-researched UFO report ever written!

WHAT GOES ON HERE?

A SWORN statement dated April 21, 1897, says:

Last Monday night about ten-thirty, we were awakened by a noise among the cattle. I arose, thinking that perhaps my bulldog was performing his pranks, but upon going to the door, saw to my utter astonishment that an airship was slowly descending upon my cow lot, about forty rods (660 feet) from the house. • Calling my tenant, Gid Heslip, and my son Wall, we seized some axes and ran to the corral. Meanwhile, the ship had been gently descending until it was not more than thirty feet above the ground, and we came within fifty yards of it. • It consisted of a great cigar-shaped portion, possibly 300 feet long, with a carriage underneath. The carriage was made of glass or some other transparent substance, alternating with a narrow strip of some material. It was brightly lighted within *(continued on page* 113



WARNING! Near approaches of Unidentified Flying Objects can be harmful to human beings. Do not stand under a UFO that is hovering at low altitude. Do not touch or attempt to touch a UFO that has landed. Get away from there quickly and let the military take over. There is a possibility of radiation danger and there are known cases where persons have been burned by rays emanating from UFOs. DON'T TAKE CHANCES WITH UFOs!

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Ufology

Are flying saucers real? They certainly are numerous.

Since 1947, when an Idaho veteran pilot named Kenneth Arnold claimed he saw nine saucers playing tag around Mount Rainier, 7,816 "sightings" have been tallied by the Air Force in the U.S. alone. In 1957, the year of the sputniks, a rash of 1,178 reports broke out. "Seeing saucers became a national pastime," according to Donald H. Menzel, Harvard's eminent astronomer, and Mrs. Lyle G. Boyd, formerly of the Smithsonian Astrophysical Observatory. In a new report on mankind's infinite gullibility, "The World of Flying Saucers" (*302 pages. Doubleday. $4.50*), they neatly debunk the cult of Ufology—the belief that unidentified flying objects are buzzing the earth.

Menzel enjoys science fiction himself. Under the name of Don Howard he has written "The Machine From Outside" (which was a UFO) and other stories. But as a scientist he refuses to confuse facts with fantasies. Though Menzel was forbidden by the Air Force to look at their UFO files in 1952 when they were classified secret, he persisted in his requests. Eventually he and Mrs. Boyd were allowed to study every dossier of a UFO still labeled unknown or questionable in the files at Wright-Patterson Air Force Base near Dayton, Ohio. With meticulous care, they matched each sighting against weather-bureau reports, charts of the stars and planets, records of meteors, comets, rocket firings, balloon launchings, and local information on fireworks displays, migratory birds, and the lay of the land.

Many of the wildest reports came from untrained observers—excitable old ladies and imaginative schoolboys, for instance, who had been primed by articles like "Have We Visitors From Outer Space?" in Life magazine or in pulps like Amazing Stories and Fate. But a considerable number of technical people claimed they saw UFO's.

Sun Dogs and Suds: Their "sightings," however, were no more valid. Arnold's disks turned out to be disk-shaped "grindstone" clouds (photo) common in the mountainous West. Similar deceptions in the sky, such as sun dogs (images of the sun reflected through ice crystals), birds, balloons, meteors, and planets accounted for 71 per cent of the reports; space satellites figured in 17 per cent last year. There were several oddities: satellite watchers at Curaçao, in 1961, trained their telescopes on a brightly colored object that turned out to be a kite on a 1,200-foot string; a frothy apparition widely seen over Pennsylvania in 1954 was caused by a sewage plant that broke down and wafted detergent suds into the wind.

Seattle Times

Grindstone clouds over Rainier: The 'saucers' that started the scare

Hardest to shoot down, in all this flying sorcery, were 26 UFO's listed by the Air Force as unknowns that Menzel and Boyd have now identified. Examples:

▶The Chiles-Whitted UFO, named for two Eastern Air Lines pilots who reported a glowing, cigar-shaped object played chicken with their DC-3 in July 1948. The thing was a meteor, part of a spectacular meteor shower that month.

▶The Gorman "Dogfight," named for a North Dakota Air National Guardsman who chased a weird blinking light in an F-51 in October 1948. It was a lighted weather balloon and mirage of Jupiter.

▶The Rotating Lights of Japan—red, green, and white blobs that whirled like jukebox lights in December 1952 and January 1953. "They" were the planet Venus reflected off high, thin clouds.

Still the saucer myths persist. Only last week, on a farm near Shaftesbury, England, a crater appeared in a potato patch and was quickly described as the landing marks of a flying saucer. Called to investigate, an astronomer decided the hole was created by a meteor. As Menzel says: "No UFO is basically mystifying when all the facts are in. In fifteen years, no evidence . . . has been found that anyone has ever seen, heard, smelled, photographed, touched, or in any way detected a UFO."

Weather to Order

Skyfire, Blackbody, and Stormfury sound like the names of fast-footed thoroughbreds. Actually, they are the hyped-up titles of three basic weather research studies now being conducted by the U.S.

The Forest Service's Project Skyfire is intended to modify thunderstorms and dispel lightning by means of cloud seeding; the Navy's Blackbody hopes to alter the albedo, or reflectivity, of ice packs and deserts by dispersing carbon black over wide areas; and the joint Navy-Weather Bureau's Stormfury uses silver iodide in an attempt to blunt the force of hurricanes. All told, the U.S. spent $4.6 million last year on such weather research; in an 84-page report to President Kennedy last week, the National Science Foundation suggested that "the time is now ripe" for a more active program of weather control.

The world's weather is probably being affected inadvertently right now, says the report. Harbors and dams alter the course of waterways, carbon dioxide from cars and factories fouls the atmosphere, and other human activities affect the balance between the amount of the sun's radiation reaching the earth and the heat reflected back into space. Looking ahead, NSF supports a long-range weather program that includes:

▶Making numerical predictions, which is another name for weather forecasting by computer, to study atmospheric forces, "including the relationship between the sun and earth as single gigantic thermodynamic system."

▶Learning how to alter the sun's radiation, which might be the key to climate control. "A possible technique for accomplishing this is the introduction of artificial clouds where large-scale weather tends to form, such as over the Gulf of Alaska," says the report.

▶Spreading suitable chemical agents aloft from satellites to trigger energy stored in the upper atmosphere. By doing this, the heat of the upper air can be increased in selected areas.

▶Experimenting to determine whether stepped-up space programs, which might pollute the planet's atmosphere with rocket fumes, can be controlled to